Detailed Action

This office action is in response to the correspondence received on July 12, 2011. Claims 1-9, 18, 20 and 22 are currently pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-9, 18, 20 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sciacca (US Patent No: 6,760,761) in view of Kuznetsov (US Patent No: 6,772,413) hereafter referred to as Sciacca and Kuznetsov, respectively.

1. With regards to Claims 1, 20 and 22 the Sciacca discloses through Kuznetsov: a method comprising: generating structured meta-data providing at least one

semantic information element describing a characteristic of an interface capability of each of a first entity and at least one other entity, said entities seeking to communicate across a network, wherein an interface of the first entity has at least one different characteristic from an interface of the second entity *(Sciacca teaches network devices that have different configurations (different characteristics); see column 2, lines 28-38, Sciacca. The devices have structured meta-data associated with them; see column 5, lines 3-15, Sciacca)*; collating the at least one semantic information elements of said first entity with corresponding at least one semantic information elements of said at least one other entity *(Sciacca teaches how device configurations stored and managed (collated) based on semantics; see column 5, lines 3-15, Sciacca)*; at run-time analyzing the at least one pair of said collated semantic information elements to establish the extent to which the interface capabilities of said entities are compatible *(Sciacca teaches constraint checks; see at least column 5, lines 55-66, Sciacca. Also see Kuznetsov below)*; and automatically generating in accordance with said established compatibility the adaptive software interface for said entities, such that the entities are able to communicate despite the face that the interface capabilities of the entities are different *(Sciacca teaches the adjustment of device configurations so that they can comply with the needs of the infrastructure/network (in other words, so that they can communicate with the other network devices); see column 6, lines 13-22, Sciacca)*

While Sciacca teaches the adjustment of device configurations (using structured meta-data) to ensure proper communication between devices within the network, Sciacca does not explicitly cite the run-time analysis of a pair of collated semantics and automatic generation of adaptive software interface. In the same field of endeavor, Kuznetsov also teaches translators/interfaces for device environment compatibility; see column 5, lines 4-8, Kuznetsov. Within Kuznetsov's disclosure it is taught how there are two protocol descriptors (pair of collated semantic information elements); see column 5, lines 21-23 and column 6, line 65, Kuznetsov. The protocol descriptors are used during runtime to map (analyze) compatible translators/interfaces; see column 6, lines 63 – column 7, line 9, Kuznetsov. Furthermore, Kuznetsov discloses how it is possible to automatically generate translators; see at least column 14, lines 10-13, Kuznetsov. The translator enables compatibility between two otherwise non-compatible computing environments. Therefore it would have been obvious, to one skilled in the art, during the time of the invention, to have combined the teachings of Sciacca with those of Kuznetsov, to provide translators facilitating data exchange between nodes of different protocols; see column 5, lines 62-65, Kuznetsov.

2. With respect to Claim 2, the Sciacca discloses through Kuznetsov a protocol where entities exchange interfaces via a so-called Lookup Service, thus disclosing: wherein the step of collating occurs dynamically during a preliminary

exchange between the two entities prior to an interface being established between the two entities *(Sciacca teaches devices looking up configuration information; see column 4, lines 52-66, Sciacca)*.

3. With regards to Claim 3, the Sciacca discloses through Kuznetsov said structured meta-data includes associated meta-data for at least one said semantic information element *(see column 5, lines 5-6, Sciacca)*.

4. With regards to Claim 4, the Sciacca discloses through Kuznetsov the semantic information element describing the characteristics of said adaptive interface is provided in said meta-data in a form independent of the version of software used to generate said metadata *(Sciacca teaches independently stored meta-data; see column 5, lines 3-15, Sciacca)*.

5. With regards to Claim 5, the Sciacca discloses through Kuznetsov semantic information compiled into classes by a Java compiler, thus disclosing: wherein said semantic information element is generated by a compiler receiving input data from an interface description and a code template *(Java is a standardized configuration language; see column 7, lines 50-51, Sciacca)*.

6. With regards to Claim 6, the Sciacca discloses through Kuznetsov said interface description includes a model of the data to be communicated across the interface and a code template *(see column 3, lines 13-23, Sciacca)*.

7. With regards to Claim 7, the Sciacca discloses through Kuznetsov a protocol that initially registers entity descriptions and interfaces, thus disclosing: wherein said semantic information element provided by said meta-data has a form which can be mapped to an appropriate transport layer and exchanged between said networked entities prior to a higher level interface being established between said networked entities *(See column 5, lines 3-15 and column 7, lines 35-42, Sciacca)*.

8. With respect to Claims 8 and 18, the Sciacca discloses through Kuznetsov: a method of establishing a compatible interface between an initiator entity and a responder entity seeking to communicate across a network in the case where an interface of the initiator has at least one differing characteristic from an interface of the responder comprising the steps of: generating at least one meta-data structure providing at least one semantic information element for each entity, wherein each said semantic information element describes a characteristic of an interface capability of one of said entities *(Sciacca teaches network devices that have different configurations (different characteristics); see column 2, lines 28-38, Sciacca. The devices have structured meta-data associated with them; see*

column 5, lines 3-15, Sciacca); collating the said meta-data structures such that the at least one semantic information element corresponding to the initiator's interface capability is collated with the corresponding at least one semantic information element corresponding the responder's interface capability *(Sciacca teaches how device configurations stored and managed (collated) based on semantics; see column 5, lines 3-15, Sciacca)*; at run-time, analyzing the collated pair of semantic information elements to determine the extent to which the initiator and the responder can generate a compatible interface *(Sciacca teaches constraint checks; see at least column 5, lines 55-66, Sciacca. Also see Kuznetsov below)*; automatically establishing in accordance with said analysis an interface between said initiator and said responder which enables them to communicate across the network despite the fact that the interface capabilities of the entities are different *(Sciacca teaches the adjustment of device configurations so that they can comply with the needs of the infrastructure/network (in other words, so that they can communicate with the other network devices); see column 6, lines 13-22, Sciacca)*

While Sciacca teaches the adjustment of device configurations (using structured meta-data) to ensure proper communication between devices within the network, Sciacca does not explicitly cite the run-time analysis of a pair of collated semantics and automatic generation of adaptive software interface. In the same field of endeavor, Kuznetsov also teaches translators/interfaces for device environment compatibility; see column 5, lines 4-8, Kuznetsov. Within

Kuznetsov's disclosure it is taught how there are two protocol descriptors (pair of collated semantic information elements); see column 5, lines 21-23 and column 6, line 65, Kuznetsov. The protocol descriptors are used during runtime to map (analyze) compatible translators/interfaces; see column 6, lines 63 – column 7, line 9, Kuznetsov. Furthermore, Kuznetsov discloses how it is possible to automatically generate translators; see at least column 14, lines 10-13, Kuznetsov. The translator enables compatibility between two otherwise non-compatible computing environments. Therefore it would have been obvious, to one skilled in the art, during the time of the invention, to have combined the teachings of Sciacca with those of Kuznetsov, to provide translators facilitating data exchange between nodes of different protocols; see column 5, lines 62-65, Kuznetsov.

9. With regards to Claim 9, the Sciacca discloses through Kuznetsov the meta-data structure is provided in a form suitable for indicating at least one semantic element taken from the group including: a description, a range, a default value *(see column 5, lines 3-15, Sciacca).*

10. The obviousness motivation applied to claims 1, 8, 18 and 20 are applicable towards their respective dependent claims.

Response to Arguments

Applicant's arguments filed July 12, 2011 have been fully considered but they are not persuasive. The following are the examiner's response to the applicant's arguments.

The first argument presented by the applicant concerns the claimed "generating structured meta-data...describing...each of a first entity and at least one other entity, said entities seeking to communicate across a network," the examiner disagrees with this assertion. The applicant contends that neither prior art teaches such a claim feature, the examiner respectfully disagrees. The applicant refers to solely column 5, lines 41-52 to discredit the Sciacca prior art. This analysis of the Sciacca prior art is incomplete. The examiner provided multiple citations with corresponding explanations. Sciacca teaches the configuration database storing meta-data that describes the semantics of interfaces. Sciacca discloses how this data is collected for the managed device and stored in the configuration database; see column 5, lines 3-7, Sciacca. Sciacca then also discloses how this data is collected for the client-end device and stored in the configuration database; see column 5, lines 41-52, Sciacca. This data is then used to provide a compliant interface on the managed device to the client-end device; see column 4, lines 7-12, Sciacca.

The second point of contention addressed by the applicant concerns the claim feature of collating the at least one semantic information element of said first entity with the corresponding at least one semantic information element of said at least one other entity. The applicant contends that this claim feature is not taught by the prior arts of the rejection, the examiner respectfully disagrees. The claim feature is claiming that between the two devices wishing to communicate, semantic information is collected and

collated from each device (the first device and the corresponding device with which to communicate with). Sciacca teaches how device configurations stored and managed (collated) based on semantics; see column 5, lines 3-15, Sciacca. Furthermore, Kuznetsov teaches how there are two protocol descriptors (pair of collated semantic information elements); see column 5, lines 21-23 and column 6, line 65, Kuznetsov. The protocol descriptors are used during runtime to map (analyze) compatible translators/interfaces; see column 6, lines 63 – column 7, line 9, Kuznetsov.

The third point of contention addressed by the applicant concerns the claim feature of analyzing the least one pair of said collated semantic information elements, at runtime. Applicant contends that Sciacca fails to teach such a claim feature, however the applicant did not properly consider the Kuznetsov reference. Within Kuznetsov's disclosure it is taught how there are two protocol descriptors (pair of collated semantic information elements); see column 5, lines 21-23 and column 6, line 65, Kuznetsov. The protocol descriptors are used during runtime to map (analyze) compatible translators/interfaces; see column 6, lines 63 – column 7, line 9, Kuznetsov. Furthermore, Kuznetsov discloses how it is possible to automatically generate translators; see at least column 14, lines 10-13, Kuznetsov. The translator enables compatibility between two otherwise non-compatible computing environments.

The fourth point of contention addressed by the applicant concerns the claim feature of automatically generating in accordance with said established compatibility an adaptive software interface for said entities. The applicant contends that this claim feature is not taught. The examiner respectfully disagrees. Sciacca teaches the

adjustment of device configurations so that they can comply with the needs of the infrastructure/network (in other words, so that they can communicate with the other network devices); see column 6, lines 13-22, Sciacca. However Sciacca does not explicitly cite the interface being automatically generated. In the same field of endeavor, Kuznetsov teaches how there are two protocol descriptors (pair of collated semantic information elements); see column 5, lines 21-23 and column 6, line 65, Kuznetsov. The protocol descriptors are used during runtime to map (analyze) compatible translators/interfaces; see column 6, lines 63 – column 7, line 9, Kuznetsov. Furthermore, Kuznetsov discloses how it is possible to automatically generate translators; see at least column 14, lines 10-13, Kuznetsov. The translator enables compatibility between two otherwise non-compatible computing environments.

The fifth point of contention addressed by the applicant concerns the Kuznetsov prior art. The applicant contends that Kuznetsov is non-analogous art and cannot be combined with Sciacca. The examiner disagrees with this assertion. The applicant tries to argue that Kuznetsov's disclosure merely teaches translating from one format to another. This is an understatement. Kuznetsov teaches translators for device environment compatibility; see column 5, lines 4-8, Kuznetsov. The translators allow for communication between devices that use different protocols (far more than a simple format translation). By allowing the devices to communicate with each other, the translators are in fact, interfaces. Protocol descriptors are used during runtime to map (analyze) compatible translators/interfaces; see column 6, lines 63 – column 7, line 9, Kuznetsov. Both Sciacca and Kuznetsov teach designs for enabling compatibility

between two devices. Therefore it would have been obvious, to one skilled in the art, during the time of the invention, to have combined the teachings of Sciacca with those of Kuznetsov, to provide translators facilitating data exchange between nodes of different protocols; see column 5, lines 62-65, Kuznetsov.

The sixth point of contention addressed by the applicant concerns the Kuznetsov prior art. The applicant contends that Kuznetsov does not teach different interface capabilities between two network devices (nodes). The examiner respectfully disagrees. As stated before, Kuznetsov teaches translators/interfaces for device environment compatibility; see column 5, lines 4-8, Kuznetsov. Within Kuznetsov's disclosure it is taught how there are two protocol descriptors (pair of collated semantic information elements); see column 5, lines 21-23 and column 6, line 65, Kuznetsov. The protocol descriptors are used during runtime to map (analyze) compatible translators/interfaces; see column 6, lines 63 – column 7, line 9, Kuznetsov. Furthermore, Kuznetsov discloses how it is possible to automatically generate translators; see at least column 14, lines 10-13, Kuznetsov. The translator enables compatibility between two otherwise non-compatible computing environments.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AZIZUL CHOUDHURY whose telephone number is (571)272-3909. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Krista Zele can be reached on (571) 272-7288. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Examiner, Art Unit 2453

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